

The VA3SCoDi Project

Historical Scientific Instruments for the Valorization and Dissemination of Scientific Knowledge

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Inventory of the "Regia Università degli studi di Pisa" 1937

New acquisition for the General Chemistry Workshop, 1874

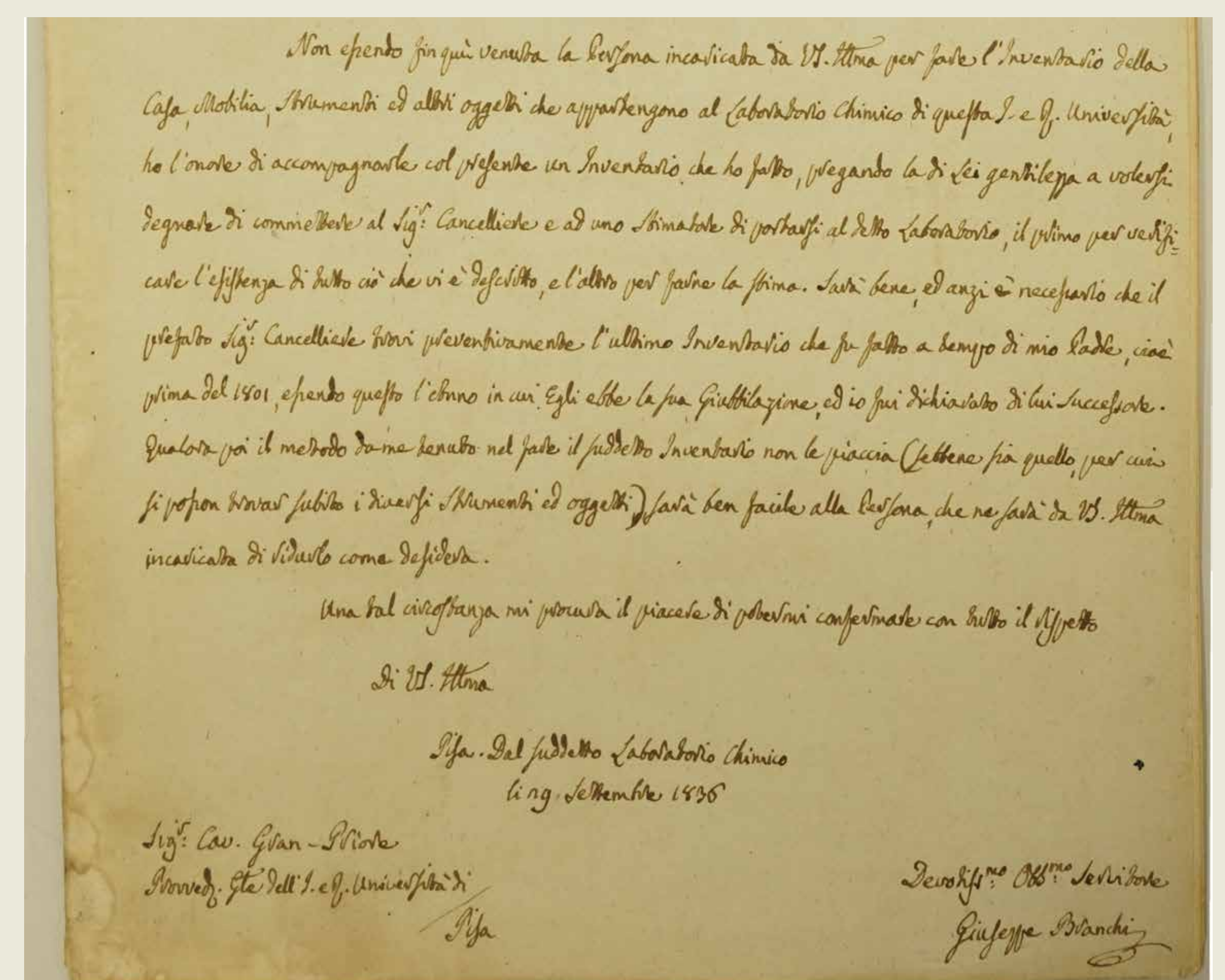
Napoleonic Inventory of what was then the "Gabinetto di Fisica Sperimentale Dell'Imperiale Accademia di Fisica" 1810



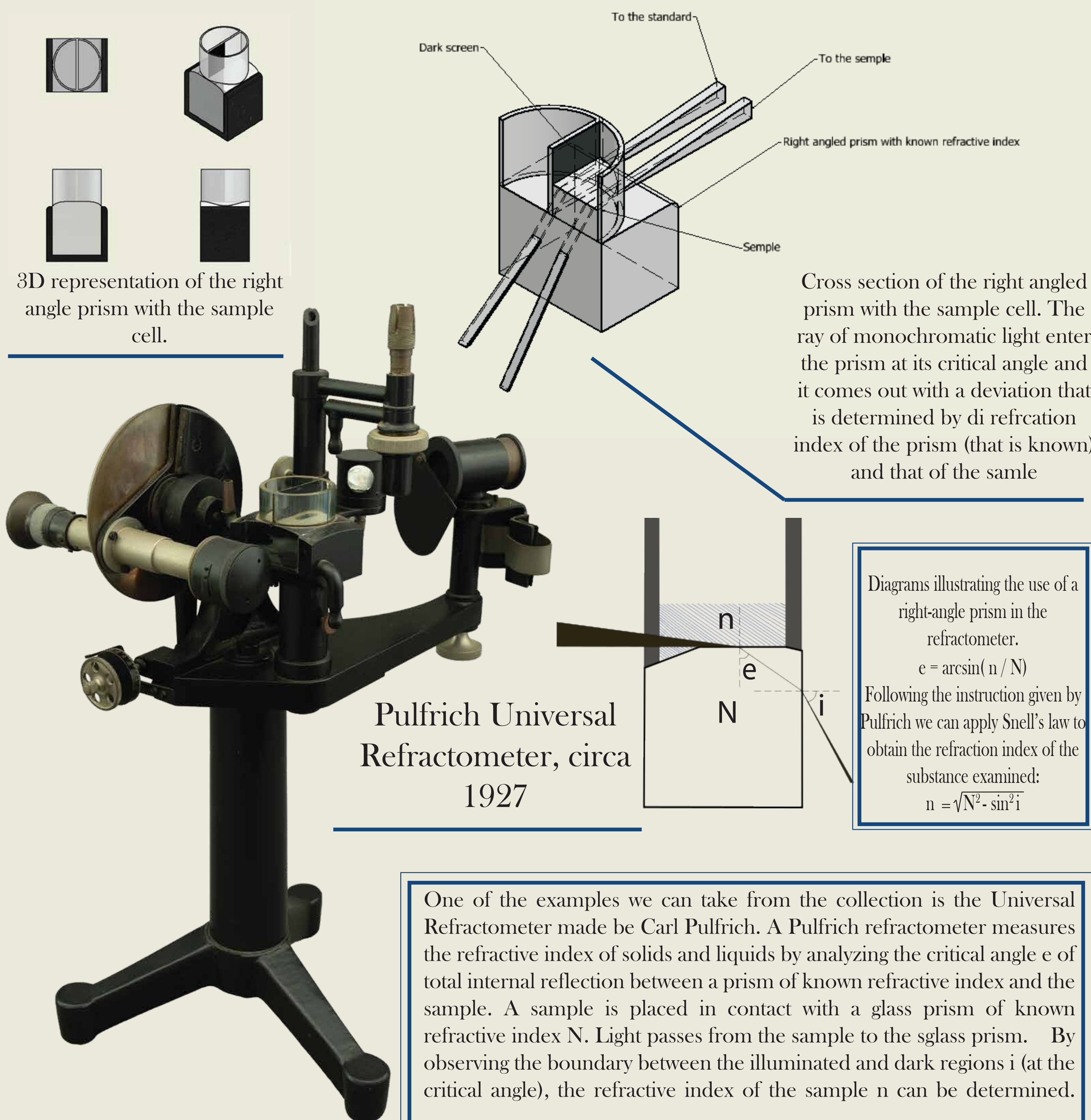
Va3SCoDi Website

First part of the research has been spent inside the University of Pisa historical archives, where it was possible to retrieve some of the original documents regarding the formation of the collection of scientific instruments of the Department of Chemistry. The archival sources allow us to put the instruments in context with the scientific and cultural activities of the chemistry practitioners, from the early years of the 19th century until the late 1970's.

Thanks to the grant bestowed by Regione Toscana and the efforts of Prof. Valentina Domenici it has been possible to begin the 'Va3SCoDi' research project, dedicated to the valorisation of historical scientific instruments through communication and dissemination of knowledge. What we have first achieved was the documentation and catalogation of the collection of historical scientific instruments of the Dipartimento di Chimica e Chimica Industriale (DCCI) of the Università di Pisa. This process will allow us to deepen our understanding of how historical scientific instruments can be used as educational tools, to use them to raise awareness toward scientific oriented studies and also to increase familiarity toward laboratory instrumentation and technical knowledge. This aims to restore a narrative dimension to the objects, treating them as material witnesses of the evolution of scientific thought. By comparing historical and modern instruments, the project seeks to challenge the increasingly passive role of users interacting with contemporary equipments, which often conceals their mechanisms behind graphical interfaces. Using historical instruments as a teaching tool encourages critical thinking and re-examines inherited knowledge, emphasizing the importance of collecting evidence rather than starting with predetermined answers.



Letter from Giuseppe Branchi to the "Signor Cavaliere Priore Beniamino Sproni, Provveditore della Imperiale e Reale Università di Pisa. 1836

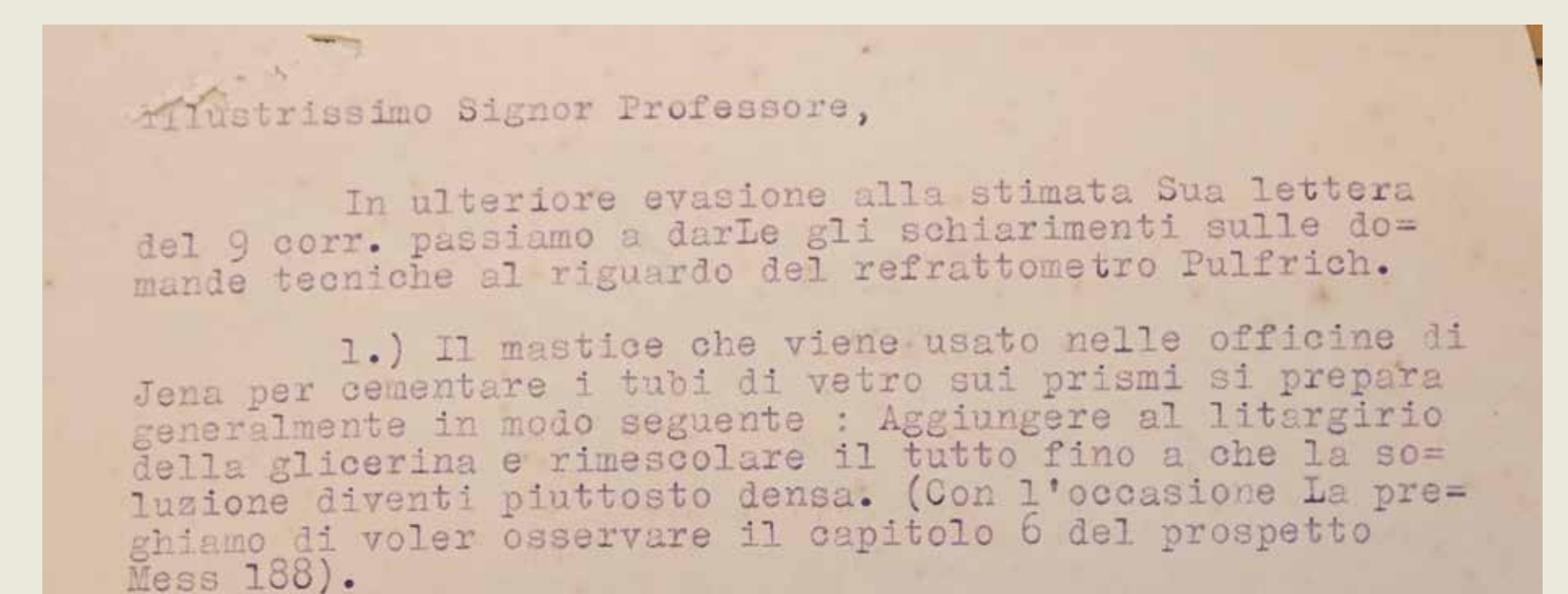
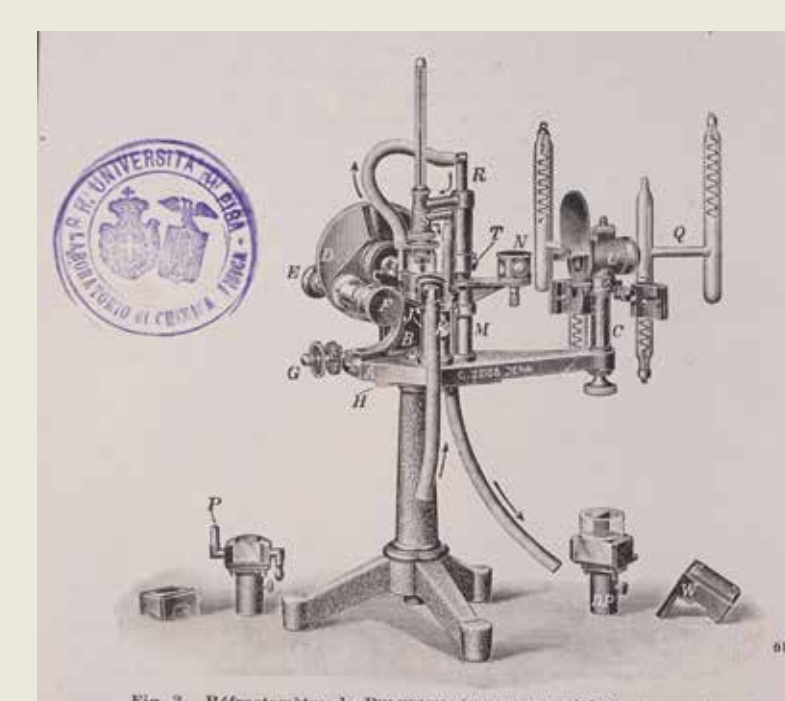


Pulfrich Universal Refractometer, circa 1927

Diagrams illustrating the use of a right-angle prism in the refractometer.
 $e = \arcsin(n/N)$
Following the instruction given by Pulfrich we can apply Snell's law to obtain the refraction index of the substance examined:
 $n = \sqrt{N^2 - \sin^2 i}$

One of the examples we can take from the collection is the Universal Refractometer made by Carl Pulfrich. A Pulfrich refractometer measures the refractive index of solids and liquids by analyzing the critical angle e of total internal reflection between a prism of known refractive index and the sample. A sample is placed in contact with a glass prism. By observing the boundary between the illuminated and dark regions i (at the critical angle), the refractive index of the sample n can be determined.

One of the most important findings so far consist in a document ten pages long, written by Giuseppe Branchi in the year 1836 to the Chancellor of the University, where the scientific instruments in possession of the chemistry workshop are listed. Branchi (1766-1847) had followed the steps of his father, Nicola Antonio Branchi (1723-1810), in the study of physics and chemistry. Nicola Antonio Branchi, physician by trade, was the first scholar to held the Chair of Chemistry founded in the University in the year 1753. The interest of father and son was directed toward the behaviour of flammable gases and phosphorus, focusing in particular on the interaction between light and certain substances. This could be an explanation of why the collection of the departments was directed primarily towards instruments dedicated to the use of light to investigate the matter.



The original instrument manual and the correspondence of the chemistry lab professor (1928) can give us useful information about the correct use and setup that we would have needed to use this instruments.



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